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ABSTRACT

The Talking Typewriter program has operated in the Cleveland Public Schools as a strategy to improve the reading skills of identified fourth and fifth grade pupils in Title I schools. A responsive environment, augmented with selected materials, special teaching techniques, and the availability of trained staff formed the core of an instructional approach to assist children with unique reading needs. This paper describes the needs and rationale of the program, the historical background of the program, the operation of the program, and evaluation of the program, the highlights of the findings, participant characteristics, project operations, staffing, parent involvement, a teachers' opinionnaire, a principals' opinionnaire, a parents' opinionnaire, and a series of recommendations for the future of the program. (TS)

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TALKING TYPEWRITER

TITLE I EVALUATION

1974-1975

Fund - 58 Component 4

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CLEVELAND PUBLIC SCHOOLS

Division of Research and Development

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TALKING TYPEWRITER

The Talking Typewriter program has operated in the Cleveland Public Schools as a strategy to improve the reading skills of identified fourth and fifth grade pupils in Title I schools. A responsive and autotelic environment,[1] augmented with selected materials, special teaching techniques, and the availability of trained staff formed the core of an instructional approach to assist children with unique reading needs.

Needs and Rationale

Authorities in the field of learning behaviors recognize that some pupils require a different modality model to achieve in reading. Silverston's research of developmental reading models led him to suggest that:

> Reading deficits occur when prerequisite discriminations are not mastered (behaviorist cognitive).[2]

The Talking Typewriter offers an efficient education strategy with a different learning environment. It combines structured materials geared toward mastery of behavioral objective to promote change in attitudes as well as improvement in reading skills. It utilizes a response to visual and kinesthetic signals as a support and reinforcement.

Poor reading skills have been viewed as a contingency to later unemployment. The child, identified as having a reading handicap in the early

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1 Moore, O.K. "Autotelic, Responsive Environments for Exceptional Children", in O.J. Harvey (Ed.) Experience, Structure, and Adaptability. New York. Springer Publishing Co., 1966. pp. 169-216.

2 Silverston, Randall A. and J.W. Deichmann. "Sense Modality Research and the Acquisition of Reading Skills." Review of Educational Research. Winter 1975. Vol. 45, No. 1, p. 155.

grades, becomes a potential candidate for dropping out of school and possibly life.

The rationale for this program rests upon certain key factors demonstrated critical to optimal learning. The factors are:

- establishment of a responsive environment
- utilization of multi-sensory techniques
- positive learning reinforcement through successful learning experiences
- self-pacing of instruction
- prescriptive teaching based on diagnostic assessment, flexibility and versatility of teaching resources. [3]

The Talking Typewriter's Responsive Environment rationale also seeks to reverse the "failure expectation" strand which may permeate many students' perception of their reading performance. Along with pupil expectation, teacher expectations exert strong influences. Cutts wrote:

> The good teacher is prepared to meet the child on his own terms, go where he is--not where he should be--then lead him to higher levels of achievement through sequential mastery of skills and systematic mastery of skills and sequential understanding basic concepts. [4]

The Talking Typewriter program attempts to provide daily reading success experiences for each child as he progresses through the program at his level.

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[3] Metfessel, Newton S. and Seng, Mark W. "Correlates with the School Success and Failure of Economically disadvantaged Children". Reading for the Disadvantaged. Harcourt Brace and World. New York, N. Y. 1970. p. 76.

[4] Cutts, Warren G., "Does the Teacher Really Matter?" The Reading Teacher. International Reading Association. Vol. 28. No. 5 New York, N. Y. p. 450.

Generally, this program seeks to improve reading competencies for children in grade four in Cleveland schools whose needs indicate a special reading approach. Follow-up, in the fifth grade, at the classroom level, provides opportunities for continuation of the instructional approach.

Generally, the goals for this program seek:

1. To improve the reading skills of pupils with serious reading disabilities in an effort to bring them up to an appropriate level of reading;

2. To encourage parent involvement and support for the participating pupil during the re-development of reading skills process;

3. To attempt to upgrade teacher competencies in the teaching of reading to the child with observed reading skill weaknesses.

Specifically, the objectives of this program include:

1. At least 40 per cent of pupils who complete the six week intensive instruction program, and 40 per cent who complete the fourth and fifth grade span (180 days) will reflect one month of gain for one month of instruction based upon comparison of their pre and post standardized test scores;

2. Not less than four out of ten pupils receiving full service, in either phase, will exhibit independent functioning with regular classroom materials, at least half of the time, as reported by classroom teachers;

3. Among classroom teachers whose classes participate in the Talking Typewriter program during the regular school year, 50 per cent will report marked changes in the use of procedures for individualizing instruction with pupils on a five point rating;

4. Principals of project participating schools will report having observed more productive instruction in reading on the part of participating teachers;

5. Parents of 50 per cent of participating pupils will have observed improvement in their child's reading performance and will so report;

6. Parents of 75 per cent of participating pupils will document their involvement with the project in support of their child's efforts to improve in reading;

Historical Background

Current reading programs in Cleveland Schools have resulted in reading gains for substantial numbers of children who have participated in the program.

In May, 1969, the Talking Typewriter Program began. This Responsive Environmental Learning Center, located in the Supplementary Education Center, near downtown Cleveland, was within convenient distance for numbers of inner-city schools. In its initial year, the program rendered service to 12 schools. Full implementation of the follow-up phase of the design has increased the number of classes served. The 1974-75 school year saw 12 schools serviced at the installation site and 12 schools having completed the follow-up program.

Summary of Operations

The project operated under the supervision of the Educational Program Manager of the Reading Instruction Program assisted in part by one consultant. Delivery of instruction was the responsibility of three reading consultants. A fourth reading consultant served as liaison between the installation program and schools. Their duties included testing and diagnosis, instructional planning, concept presentation, prescriptive teaching, individualization, consultation and remediation. Additional support in remediation efforts was given by tutors assigned to the project from the Resident Tutor Project under the supervision of the Talking Typewriter professional staff. The five Talking Typewriters were monitored and operated

by three educational assistants. The staff and the educational assistants worked as a team to coordinate programming to meet the needs of individual children. A unique feature of the design was the inclusion of the classroom teacher trained by the Talking Typewriter staff whose functions were to carry the program in the related classroom.

The evaluation focuses on operations during the 1974-75 school year. Total enrollment for the year was 757 pupils. Appendix I summarizes the enrollments for the project schools.

Project costs amounted to $178,516 which represented a per pupil expenditure of $235.82.

Questions To Be Answered By Evaluation

1. What improvement did participating pupils make in reading as indicated by changes from pre to post test scores?

2. What were the changes in reading behavior patterns and attitudes toward reading observed by their teachers?

3. What improvement in reading was observed by parents of participating pupils?

4. To what extent did principals feel that the Talking Typewriter program was beneficial to pupils and teachers who participated from their schools?

5. How were prior Talking Typewriter pupils performing in reading in their current classes based upon their placements on city-wide tests?

II. HIGHLIGHTS OF FINDINGS

Summary of Key Findings

It should be recognized in interpreting results of this evaluation that participating children have exhibited low levels of reading mastery and failure through the greater portion of their school experience. Gains made through participation in the Talking Typewriter were obtained through an intensive and individualized treatment plan over a six week period. During the 150-day classroom program, in which pupils attempted to maintain and improve their reading performances, Talking Typewriter instructional strategies were continued.

This evaluation addresses itself to specific question. Its findings include:

1. What improvement did participating pupils make in reading as indicated by changes from pre to posttest scores?

   - Mean gain scores from pre and posttests gave evidence that fourth grade pupils, who participated in the six-week intensive instruction phase of the program, achieved an average gain of four months in vocabulary and seven months in comprehension

   - Mean gain scores from pre and posttest showed that fifth grade pupils in home school follow-up classes, who completed the 180 day design (six weeks, Phase I and 150 days classroom follow-up) achieved an average gain of two months in vocabulary and no gain in comprehension beyond gains of four months in vocabulary and three months in comprehension at the end of Phase I involvement.

2. How many participating pupils improved their reading performances to the level specified as one month gain for one month of instruction according to the program objective?

- At fourth grade level, 66.4 per cent of project participants attained the objective's criterion

- Thirty-five per cent of fifth grade pupils attained the criterion at the end of the 150 day follow-up period.

3. What changes in reading patterns and attitudes did teachers observe?

   - Teachers reported having noticed a decrease in levels of reading frustration among pupils

   - Positive changes in pupils' attitudes toward school as a whole, and reading specifically

   - Greater desire to read was observed

   - Improved reading skills were noted by the majority of teachers.

4. How did parents perceive the impact of the program on children's reading?

   Parents reported:

   - high interest in reading

   - greater concentration and attention to what was read

   - more reading speed

   - improved self-motivation

5. What was the reading performance of fifth graders who had completed the Talking Typewriter program, who became sixth graders and participated in the sixth grade city-wide testing program?

   - Stanine status for a randomly selected sample of former Talking Typewriter participants reflected stanine four status in vocabulary and stanine three status in comprehension.

3. Strict adherence to the selection of pupils for Talking Typewriter classes by all school principals.

4. Provision of additional opportunities for parent visitation to the project. Many parents are employed and cannot attend on program scheduled parents visitation days.

5. Orientation meetings for teachers from schools scheduled to participate in the Talking Typewriter program during the year, to be held in early September.

Implications And Recommendations

The results of this evaluation study showed that pupils increased their reading performance dramatically during participation at the Talking Typewriter installation site. The pace of reading growth slowed during the 150 day follow-up period. Two factors have been identified and documented over the span of this program's operation which have a definite impact on the reading performances of pupils. Pupils with severe reading skill weaknesses require reading instruction which places emphasis on their learning modalities. A high motivational environment does result in improvement. Levels of testing must be selected to provide adequate measurement of growth over the span of treatment time. It had become evident that the test level for the Talking Typewriter program should be raised to elementary level, as pupil gain in the first six weeks's program left little room for realistic measurement of their reading growth during the 150 day follow-up program. The second factor concerned the effect of class composition. Careful selection of participating pupils is as critical as careful selection of the classroom teacher. Inclusion of some pupils with known discipline problems, poor attitudes toward conformity, and other emotional adjustment problems, diverts the required attention of staff away from the program's task and interferes with the reading progress of all pupils in that class. Continuity of the growth pattern in that class, which the classroom teacher must face as the class progresses through the follow-up period, becomes compounded.

Recommendations, based upon the evaluation study, input from parents, teachers and principals suggest:

1. Continuation of the Talking Typewriter program.
2. Change of test level from the primary (out-of-level) to elementary test level.

III. PROJECT DESCRIPTION

Participant Characteristics

It was anticipated that approximately 420 pupils could be served for instructional periods of six weeks during the school year. Pupils in classes from 12 target Title I schools would receive 15-20 minutes of computer-based instruction based upon Sullivan materials, followed by an extensive reinforcement period in the related classroom.

Pupils eligible for service would give evidence of one or more of the following:

- severe reading disability for grade
- multiple classroom problems which parallel reading skill deficiency such as poor attention span, poor self-motivation, maladjustment, self-concept, excessive absence, and an apathetic attitude
- lack of confidence in the ability to learn to read
- history of school failure and limited success in mastering the language based subjects.

Talking Typewriter staff, and classroom teachers agreed that the participants selected:

- had a record of school failure as evidenced on cumulative records
- manifested personality problems as the results of failure frustrations
- related poorly to the reading process
- ranked from one to three grades lower in comprehension and vocabulary skills, based on standardized test scores
- showed records of poor attendance suspected to be related to inability to compete favorably within the classroom due to reading deficiencies.

- would react favorably to a new approach in reading in which:

  - the classroom teacher would participate as part of the teaching team

  - failure frustrations were controlled

  - materials were closer to actual reading level

  - peer competition factors were removed

  - progress could be made at pupil's reading rate

  - a new stimulus was provided for motivation

  - a longer period of time was devoted to intensive remediation of reading needs.

During the 1974-75 school year, a total of 757 pupils enrolled in fourth and fifth grade regular classes of 24 schools were participants in the Talking Typewriter program. The design of the program placed two classes at the instructional site every six weeks. After completion of the six week phase of the program, these classes returned to their home schools and entered the 150 day follow-up phase of the program. Consultant services to the teacher and class were provided by one of the trained Talking Typerwriter staff. Full implementation of the continuum necessitated continuous scheduling of classes into the site.

The following table reflets the number of schools involved.

TABLE 1

SCHOOLS SERVED BY TALKING TYPEWRITER
1974-1975

Year	Schools	Pupils
September 1974-June 1975.....	Public Elementary...22	694
September 1974-June 1975.....	Parochial Elementary... 2	63
	Total 24	757

The continuum plan places two schools in a pre-test phase, two schools at the instructional installation, six schools in follow-up and two schools in a posttest phase at any given time of the school year.

Project Operations

At the end of third grade, some children have experienced serious reading disability yielding a history of failure. The pleasure of reading success has eluded them as they have not been able to relate to the core reading process. The major thrust of this program is directed toward children in this category at grade four level.

Each Talking Typewriter is enclosed in a private booth where the pupil, completely alone, faces no competitive pressures, hears no distracting noises, proceeds at his own pace and suffers no embarrassment if his reading level is low.

Five booths permitted a total of 20 children per hour utilization of the Talking Typewriters. Information was presented audibly and visually, with any desired sequence of letters, words and paragraphs. It responded to the student, providing a constant flow of responses, resulting in a continuous success-confidence building experience for the learner. The booths were monitored by a staff of trained aides who added a "comfort" factor.

Introduction and reinforcement of programmed concepts, with which the student would work in Talking Typewriter sessions, were taught by three reading consultants and the classroom teacher. In addition, the classroom teacher received "on-the-job" training in techniques geared to meeting individual reading needs. Small group and individual tutoring was accomplished by educational assistants and graduate student tutors from the Resident Tutor Program. The supportive services of specialized personnel at Diagnostic Reading Clinic were available upon request.

Proper placement of pupils into the Sullivan materials was based upon results from administration of the Cognitive Abilities Test, Primary II, Form 1, Metropolitan Primary II Reading Tests (1970) Form F and Sullivan Placement Tests. Posttesting procedures utilized Form G of the Metropolitan Reading Tests at the end of six week program and Form H at the end of the 150 day program.

Intelligence measures were considered only in that they resulted in approximation of the child's potential at the time of testing and were not considered conclusive of this innate abilities. The median deviant intelligence score from a sample of pupils in seven classes which received the services of the Talking Typewriter in 1974-75 was 78.4.

The Metropolitan Primary II Reading Tests were administered pre and post to establish the level of reading achievement.

Staffing

This project operated under the guidance and supervision of the Educational Program Manager of the Reading Instruction Program assisted by one teacher-consultant. Four trained reading consultants, a part-time parent coordinator, and clerk, completed the assigned staff at the installation. Children were transported to and from the Talking Typewriter site by minibus, utilizing the part-time services of two drivers. Specialized staff from the Diagnostic Clinic, psychologists, nurse and social workers, provided part-time services upon request. Further efforts at individualization of remediation were offered by tutors from Resident Tutor Program under the guidance of the Talking Typewriter staff.

A unique feature of the instructional program was the inclusion of the classroom teacher as part of the teaching team. Classroom teachers were trained by the consultant-teachers and received valuable experience as part of the team.

In-Service Training

In-service activities for the teachers at the installation were conducted by the Talking Typewriter professional staff, whenever the need arose. In addition, staff was involved in all in-service activities of the Reading Instruction program presenting experts in the field of reading.

Weekly staff meetings were scheduled to discuss plans and problems. These meetings provided the staff an excellent opportunity to correlate and build techniques for use in working with parents and interested community adults.

Parent Involvement

In line with program design, a parent observation meeting was scheduled during the span of time the class was in attendance at the site. A total of 84 parents attended group meetings at the installation site.

Advisory Committee

The Talking Typewriter Parent Advisory Committee was part of the larger Parent Advisory Committee for the Reading Instruction Project.

IV. EVALUATION

Basic Design

The nature of the Talking Typewriter evaluation design did not lend itself to the use of an experimental-control design for evaluation purposes. An individual-vs. self assessment was employed. The design involved a 2 x 3 time span assessment over a 180 day instructional period. Each child would serve as his own control. Another aspect of appropriate functioning by pupils was adequate classroom performance as observed by the classroom teacher. Parents were asked to submit their opinions of their child's improvement as judged by their observations of reading performance outside the classroom.

The evaluation centered on these key questions:

1. What improvement did participating pupils make in reading as indicated by changes from pre to posttest scores?

2. What were the changes in reading behavior patterns and attitudes toward reading as observed by their teachers?

3. What improvement in reading was observed by parents of participating pupils?

4. What was the stanine status of pupils in the fourth grade Talking Typewriter classes on city-wide standardized achievement tests?

5. What was the stanine status of 1974-75 fifth grade Talking Typewriter pupils who were administered the standardized sixth grade city-wide test in February of the 1975 school year?

Results and Analysis of Findings

A random sample of five schools with participating fourth grade classes was selected for evaluation purposes. These schools were representative of the six weeks design of the program which operated at the Talking Typewriter installation. Data from a population sample of 116 pupils in grade four formed the basis for findings related to Phase I. Follow-up data were drawn from obtained scores of 46 pupils who were involved in the fifth grade classroom program during the 1974-75 school year who having completed the 150 day design will be referred to as Phase II in this evaluation.

The Metropolitan Primary II Reading Tests, Forms F, G, and H and the Cognitive Abilities Test, Primary II were administered to all participants as instruments of pre and post measurement. Classes in 1974-1975 fifth grade classes (Phase II), posttested on the Metropolitan Reading Test, Form H. Information gained from the results of testing, in addition to teacher and parent assessment of pupil progress, was used to provide answers to questions posed in this evaluation.

> What improvement did participating pupils make in reading as indicated by changes from pre to post-test scores?

Observation of mean gain scores from pre and post testing with the Metropolitan Reading Tests, Forms F and G gave evidence that Phase I classes achieved an average gain of four months in vocabulary and seven months in comprehension after six weeks of intensive instruction. Table 2 presents the findings.

TABLE 2

GAINS BASED ON STANDARD SCORES
METROPOLITAN READING TESTS
FORMS F AND G
Primary Level*
1974-1975
N-116

N Pupils	Vocabulary				Comprehension			
	Form F		Form G		Form F		Form G	
	Pre	Sta.	Post	Sta.	Pre	Sta.	Post	Sta.
116	57.2	4	61.1	5	52.9	4	59.6	5
Average Gain in Months			.4				.7	

This sample of pupils reflected mean aptitude scores of 78.42 which was interpreted as being in the below-average range. School records showed a history of slower than average progress through the primary grades, which prior and present classroom teachers attributed to the severity of their reading problems. Mean age for pupils in the evaluation sample was 10 years, 5 months. Most pupils enter fourth grade at age nine. The discrepancy between the mean age of pupils in this sample showed them one year and a half overage for grade level.

The rationale of the Talking Typewriter programmed materials proposes a two year gain for one year of instruction. This is equivalent to a proportionate gain of two months for one month of instruction. The sample attained an average gain of four months in vocabulary and seven months in comprehension during the one month spent in instruction. At the time of entry into the program, the average stanine placement for pupils in the five classes used in the evaluation was stanine 4 in vocabulary and stanine 4 in comprehension. In a span of six weeks of instruction, (Phase I), pupils had

* Out-of-level testing.

increased their average stanine status to stanine five in vocabulary and comprehension.

Standard scores are useful in reporting a score's distance from the mean in terms of standard deviation units. The mean is generally accepted as 50 with a standard deviation of 10. Standard scores on the Metropolitan Tests express results for a subtest area for all batteries and all forms on a single common scale. Within a single subtest area, standard scores are directly comparable from battery to battery and from form to form.[5] The Talking Typewriter program uses three forms of the Metropolitan Reading Tests, forms F, G and H. Schools enter and leave the program on a six week schedule. Other schools which have completed the 180 day design are tested at varying points in time throughout the year. Use of the standard scores permits comparison of scores across the three forms of the test. Raw scores on these tests are converted to standard scores. Standard scores being equal units of measurement with nonvarying size from distribution are useful for the type of reporting necessary for this evaluation. Stanines were selected over percentile ranks as it is recognized that stanines are equally spaced steps along a scale. Stanines have a mean of 5 and standard deviation of approximately 2.

t statistics between observed means of raw scores in vocabulary and comprehension, pre and post, were computed as one means of determining the extent to which gains were significant. *t* ratios of 7.56 in vocabulary and 8.53 in comprehension resulted when data was submitted to this statistical test. Both *t* ratios were found significant beyond $p. \leq .0005$, two-tailed probability. The data is summarized in Table 3.

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5 Durost, Walter N., et. al: Metropolitan Achievement Tests, Primary II, Teacher's Handbook:

TABLE 3

LEVELS OF SIGNIFICANCE FOR DIFFERENCES
BETWEEN MEANS OF STANDARD SCORES
METROPOLITAN READING TESTS
Primary II, Form F
Pre & Post, Form G
Grade 4
N=116

α - p. $\leq$ .0005

Subtest	Difference Between Means	Standard Deviation	t Value	Degrees of Freedom	Probability	Decision*
Vocabulary	3.92	5.59	7.56	115	P. $\leq$ .0005	s
Comprehension	6.76	8.54	8.53	115	p. $\leq$ .0005	s

*s =significant n.s. not significant

It has been pointed out that pupils in this sample were overage for present grade level.

Excessive age for grade suggests that such pupils will evidence large differences between their reading scores and grade placements. This becomes a critical handicap which must be overcome in the process of remediation before real gain can be observed. Intelligence measures form only one basis of consideration when assessing the progress of the individual pupil. These measures are interpreted as the approximate level of functioning of the pupil at the point in time of testing. It is recognized that many extraneous variables are operative which may have indirect bearing on pupil performance. Proper assessment of growth in reading requires use of some measure describing those attributes the child possesses which will assist in the development of that kind of educational environment which takes advantage of strengths and provides maximum learning experiences in those areas where reading weaknesses are evident.

Combining information gained through a variety of sources, the Talking Typewriter program attempts to develop a profile, to provide individualized and small group instruction in an intensive six week session utilizing a high reading motivational environment centered around the Talking Typewriters, eclectic classroom approaches, trained consultants and the classroom teacher, and a wide variety of materials as impetus to spur pupils toward successful reading experiences.

Phase II

Upon completion of Phase I (six weeks intensive instruction at the Talking Typewriter installation), classes continued the program in their home schools for a period of 150 days. Assistance to these classes and their teachers was given from the Talking Typewriter professional staff. During the 1974-75 school year, 12 schools completed the 150 day design and were phased out of the program. Data presented in this section of the evaluation are pertinent to a sample of two schools randomly selected from this group of schools.

The roster of Phase II schools may be found in Appendix I. These were fifth grade classes.

A sample population of 46 pupils was involved in the Phase II study. For purposes of validity, only those pupils who attended the six week phase and the classroom follow-up program were considered as having completed the 180 day design. Pupils in this sample were tested with the Metropolitan Reading Tests, Form H.

The sample population was typical of that discussed in the preceding study of Phase I. The mean age of the group upon entry was 10-10 and mean D.I.Q. 84.67. This supports the premise that participants exemplified

the characteristics of excessive age and below-average scholastic aptitude typical of other pupils with reading deficiencies.

Average gains from reading scores were based upon results obtained from the administration of Metropolitan Achievement Tests, Form H. Gains and observed means of standard scores are presented in Table 4 and reflect a comparison of pre and post performance.

TABLE 4

GAINS BASED ON STANDARD SCORES
METROPOLITAN READING TESTS
FORMS G AND H
Primary Level*
N=46

N Pupils	Vocabulary				Comprehension			
	Form F		Form G		Form F		Form G	
	Pre	Sta.	Post	Sta.	Pre	Sta.	Post	Sta.
46	60.5	5	62.5	5	58.6	5	59.4	5
Average Gain in Months			.2				.0	

Statistical tests applied to differences between means of standard scores, vocabulary and comprehension, revealed no levels of significance in either subtest. Table 5 reflects this findings.

* Out-of-level testing.

TABLE 5

LEVELS OF SIGNIFICANCE FOR DIFFERENCES
BETWEEN MEANS OF STANDARD SCORES
METROPOLITAN READING TESTS
Primary II, Form G
Pre & Post, Form G
N=46

$\alpha = p. \leq .0005$

Subtest	Difference Between Means	Standard Deviation	t Value	Degree of Freedom	Probability	Decision*
Vocabulary	2.00	5.90	2.30	45	$p. \leq .03$	n.s.
Comprehension	.8261	9.82	.57	45	$p. \leq .57$	n.s.

s = significant

*n.s. = not significant

Throughout the history of the Talking Typewriter program, there has been repetition of the gain pattern in the six week phase of the program followed by a regression pattern in the 150 day classroom design. Several factors have been identified as contributing to the regression. First, mobility rates in participating schools are high. Fourth grade Talking Typewriter classes have remained mainly intact throughout the fourth grade. By the end of the year and the beginning of fifth grade, some students have transferred from their home schools or other pupils have been added to the school class. Adding children to the fifth grade class is necessary at the school level as initial Talking Typewriter class is organized in a special manner with lower numbers due to eligibility requirements and the transportation problems. Balancing the pupil-teacher ratio within the schools is critical to effective school operation. This places some students in the follow-up class who were not eligible for the Phase I class, but whose reading status could benefit from the Talking Typewriter instructional rationale.

The second factor has been testing. Within the past three years, there has been evidence that pupils reading gains were not realistically measured with the primary forms of the test. The primary test ceiling was inadequate for fourth grade pupils who were selectees for this program. The 1973-74 evaluation recommended use of a more difficult form of the test. The test was piloted in this project in the beginning of the 1975-76 year. Project administration reported full initiation of use of the more appropriate elementary form of the Metropolitan Reading Tests, during the second half of the current year.

Consideration was given to the first objective which sought to determine the per cent of pupils who gained one month for one month of instruction. Evaluation findings showed that 66.4 per cent of fourth grade and 35 per cent of fifth grade Talking Typewriter participants attained the objective's criteria. The results are shown in Charts I and II. In interpreting the charts, attention is directed toward the entry per cents. Project class summary sheets show that at fourth grade, 97.8 per cent of pupils assigned to the classes by school administrators met the pretest requirements. However, as there was no other placement for the 2.2 per cent who would have had to remain at school until the class returned from the installation site, these pupils were permitted to accompany the class. At grade 5, as had been previously explained, the number of pupils added to the fifth grade was due to replacement of transferred students and equalization of class loads within the schools. The low per cent of pupils in the fifth grade classes (35.0 per cent) who made the gain of one month for one month of instruction over the span of 150 days might have resulted from the primary test ceiling which was too low in relation to gain achieved in Phase I. Results from use of the elementary test level in the 1975-1976 evaluation study should provide clarification. Charts I and II reflect the summary.

TALKING TYPEWRITER PROGRAM
1974-1975
GRADE FOUR
PRETEST AND POSTTEST STATUS
N = 137
COMPREHENSION SUBTEST
METROPOLITAN READING TEST
PRIMARY F PRETEST
PRIMARY G POSTTEST
SIX WEEKS

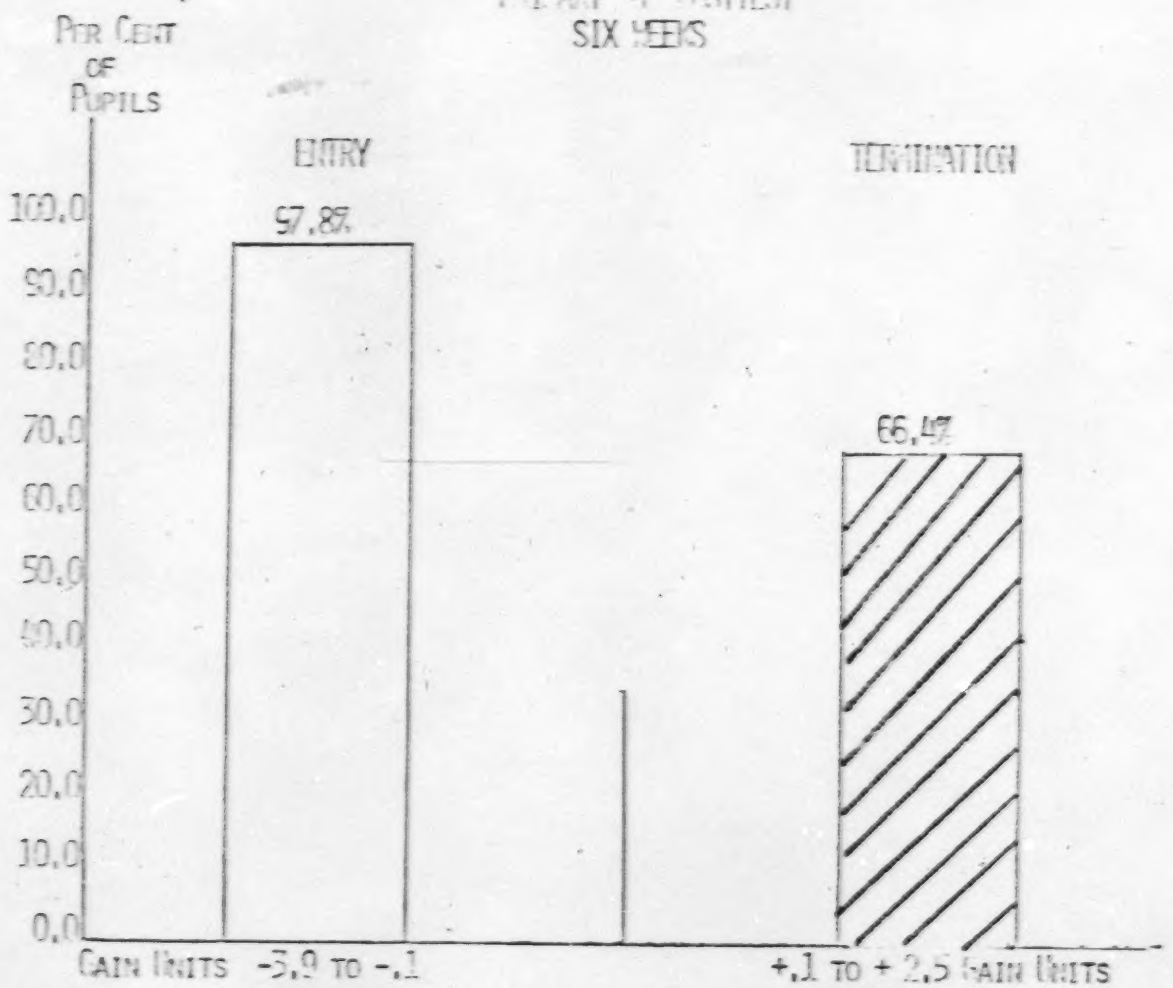
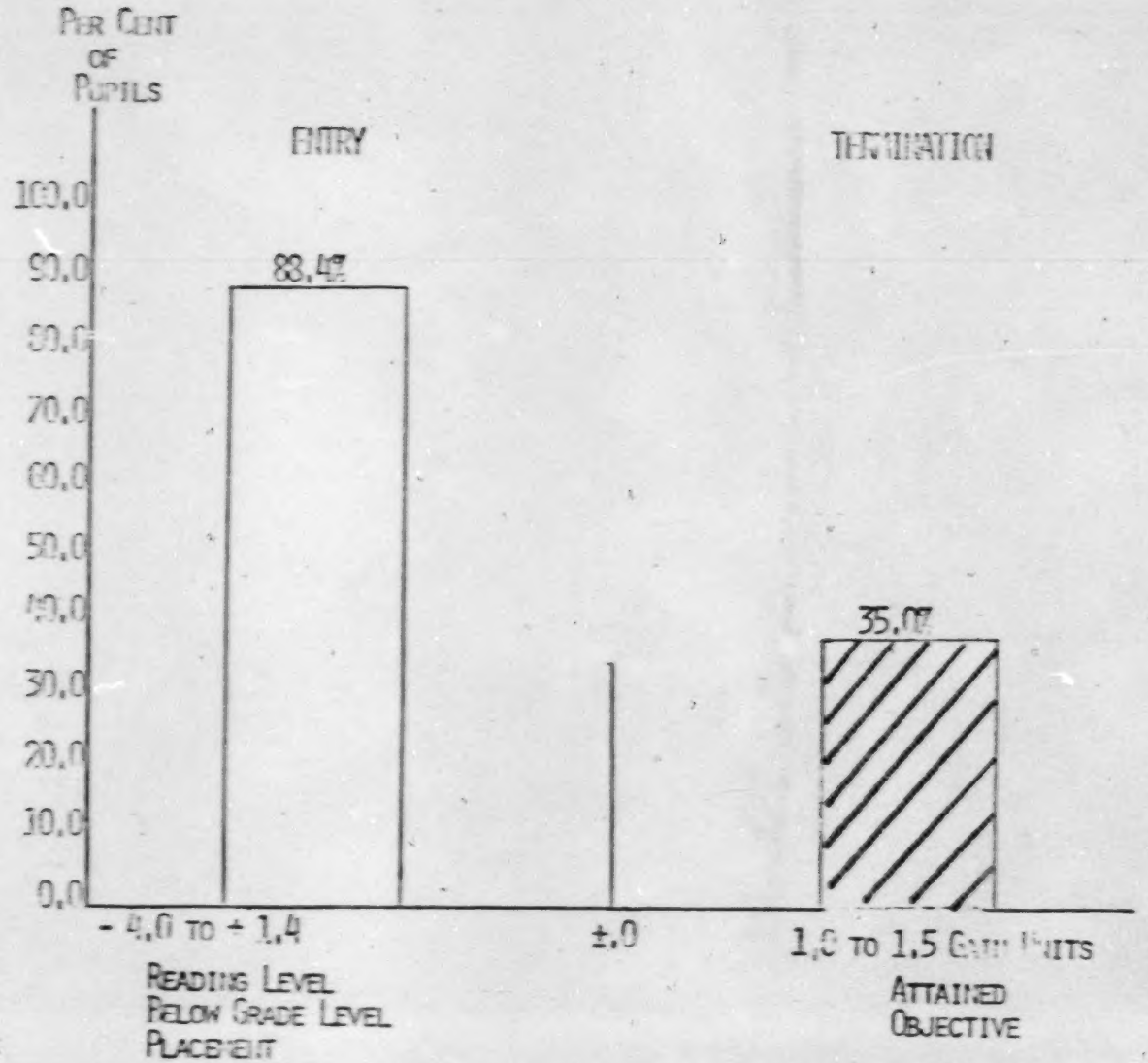


CHART II

TAKING TY[illegible] PROGRAM
1974- 1975
GRADE FIVE
PRETEST AND POSTTEST STATUS
N=43
COMPREHENSION SUBTEST
METROPOLITAN READING TEST
PRIMARY G PRETEST
PRIMARY H POSTTEST
100 DAYS



The project had implemented the training of a classroom aide along with the classroom teacher at the time that the class was in attendance at the Talking Typewriter site to provide additional support for the classroom teacher and pupils upon their return to their home school. The project continued emphasis on teacher selection as strength, creativity and flexibility was deemed necessary teacher ingredients for pupil success. Evaluation findings from the 1974-75 project years, reflected the wisdom of this step. The transition period is critical in the maintenance of reading performance levels which pupils have achieved during the six week Phase I period. An intensive effort directed toward increased support from project staff to the follow-up classroom teacher is a challenge which remains for the project.

Follow-up

The study of longitudinal effects from the evaluation study begins with observation of the impact of the effect of the Talking Typewriter program on the stanine status of fourth grade participants in this program on city-wide test results from the Comprehensive Tests of Basic Skills, Level 2, Form Q administered in May, 1975.

The sample was composed of 98 fourth grade participants from schools involved in this evaluation whose city-wide test scores were available. It must be kept in mind that identified pupils for the Talking Typewriter program had histories of reading failures prior to the Talking Typewriter experience. The sample of pupils achieved stanine four status in reading on the city-wide test. One assumption drawn was that while pupils were still actively involved with the program, there was evidence of application of learnings on scores received on city-wide testing.

However, the third sample of pupils who had been in the program in 1972-73 and had reached the sixth grade, where they no longer had program support, reflected a regression pattern. Average stanine placement for this sample of 63 pupils was stanine four in vocabulary and stanine three in comprehension. The conclusion may be drawn that pupils with severe reading deficiencies who require reading instruction in line with specific learning modalities, oral, auditory, visual and kinesthetic, tend to lose confidence in their reading abilities without support.

Teacher Opinionnaire.- Teachers of the four Phase I classes randomly selected for evaluation purposes provided, not only their opinions of the project, but ranked the reading performances of a randomly selected sample of pupils in their classes. One teacher experienced a first entry into the Talking Typewriter program. Three teachers participated for the third time.

In response to the question of how they viewed the project in terms of ways in which the Talking Typewriter approach met the reading needs of pupils in their classes, teachers reported that the project was:

- especially helpful to those who have average and below-average scholastic aptitudes, and have fallen behind in reading
- helpful to those pupils whose progress was not hindered by poor attitudes or who had discipline problems
- fruitful in building self-confidence in each child
- a source of constant reading reinforcement which increased pupils' reading growth
- offered an approach in which children could see their work checked "on the spot"
- one in which the child counted with the teacher as a person
- class size was small enough that high quality teaching could be done.

Teachers were offered an opportunity to make suggestions based upon their experiences in utilizing this approach to teaching reading. One teacher expressed the opinion that the program was not greatly helpful to children with poor learning attitudes, discipline problems and scholastic aptitude in the below-average range. This teacher pointed out a problem area which the project has tried to avoid. That problem concerns the infrequent school inclusion of pupils in Talking Typewriter classes whose

reading problems are not necessarily due to reading alone. Other teachers suggested an extension of time for classes at the center and workshops held at the beginning of the year for teachers whose classes are scheduled for entry during the school year.

Respondents rated the degree to which the program had contributed to changes in methods of individualizing instruction for pupils. Seventy-five per cent of the four teachers felt that the change had been "very marked". The remaining teacher (25 per cent) reported "some change".

All teachers observed changes in pupils' reading performances for the majority of pupils in their classes from "some to "very marked".

OBSERVED CHANGE IN PUPILS'
READING PERFORMANCES BY
CLASS MAJORITY
N=165 Pupils
N=4 Teachers

	RATINGS				
	Very Marked Change	Marked Change	Some Change	Little Change	No Change
Per Cent of Teachers	50.0%	25.0%	25.0%	0.0%	0.0%

Each teacher in the sample was asked to rank the reading performances of a randomly selected sample of 22 pupils in Talking Typewriter classes in relation to specific reading skills areas. It must be recognized that the criteria for eligibility for Talking Typewriter classes was expected to yield a high degree of homogeneity in reading abilities among pupils in classes, selected for this project by school principals. Teachers were asked to consider the total class divided into fifths in terms of where pupils would rank in terms of abilities to perform with specific reading skills in their class.

CHART I

From your knowledge of this pupil's work in your classroom, how would you rank this child's reading performance as described below in relation to the other children in your class. (Visualize your class as being divided into fifths.)

Number of pupils in sample [22]

(Please Check)	Rank in Class					
	Top 1/5	Second Highest 1/5	Middle 1/5	Second Lowest 1/5	Lowest 1/5	No Report
a. recognizing consonant sounds	31.8%	27.3%	31.8%	0.0%	4.5%	4.5%
b. recognizing vowel sounds	27.3%	18.2%	40.9%	9.1%	4.5%	0.0%
c. identifying sight words for grade level	40.9%	27.3%	27.3%	4.5%	0.0%	9.1%
d. pronouncing words at grade level	31.8%	13.6%	36.4%	4.5%	13.6%	0.0%
e. reading orally without undue frustration	31.8%	9.1%	45.5%	4.5%	9.1%	0.0%
f. finding main ideas	18.2%	22.7%	27.3%	18.2%	13.6%	0.0%
g. following sequence	22.7%	13.6%	18.2%	18.2%	9.1%	18.2%
h. getting meaning of words from context	18.2%	40.9%	27.3%	4.5%	9.1%	4.5%
i. recognizing directly stated details	18.2%	31.8%	27.3%	18.2%	0.0%	4.5%
j. drawing conclusions from facts or statements	18.2%	13.6%	36.4%	18.2%	13.6%	0.0%
k. participating in reading group	18.2%	18.2%	31.8%	13.6%	4.5%	13.6%
l. completing written assignments	22.7%	22.7%	40.9%	9.1%	4.5%	0.0%

A survey of the above chart showed the majority of students ranked from the middle one-fifth to the top one-fifth of their peers. Again, the factor of possible homgeneity of reading performance within the class was revealed. In this situation, it was possible for more students to observe individual reading growth during each Talking Typewriter session, view their problems, and see their successes, a reversal of their repeated history of reading failures, prior to program entry.

Teachers recommended that more students have an opportunity to participate in this program.

Principals' Opinionnaire.- Principals of nine schools responded to the principals' opinionnaire. Six of the schools had classes which completed the six week phase of the program, while eight had classes which had completed or were in the 150 day Phase II classroom follow-up program.

School principals were asked to note the number of times they had accepted the project's invitation to participate in the program. One school had participated four times, two schools were attending for their third time, two schools, a second time and three schools entered the program for the first time in 1974-1975.

Principals viewed the strengths of the program as:

- individual instruction with each child working at own rate of speed
- educational aides assisting in the classroom
- children's experiences of reading success
- a second chance for pupils to learn to read
- development of good study habits
- incentive to teacher - a new approach.

Elements which principals felt could be improved were:

- arrangements for conferences with parents, teachers and pupils
- elimination of difficulties involved in placing transferred pupils in the classes
- help for teachers in relating this program to the basal reading program
- a guideline to help teachers translate program placement to a grade level for a child who transfers.

Reactions from classroom teachers and students which principals felt would strengthen the program were a desire for smaller classes and continued encouragement for pupils that they had the ability to read.

Principals observed more productive instruction which fostered attention to individual pupils' reading by Talking Typewriter teachers and recommended continuation of the program. There was stress placed on the need for more help for the classroom teacher to assist the teacher in "dovetailing" the Talking Typewriter program and the regular reading program so that the pupil "does not miss so much of the regular reading program".

Parents' Opinionnaire.- A sample of 24 parents reported that they learned of their child's participation in the Talking Typewriter program in one of three ways:

Communication	Per Cent
Letter from school	45.8
Child said	50.0
Teacher called.	4.2

Fifty-four per cent of parents observed their child at the Talking Typewriter installation. Approximately 45 per cent did not.

Parents saw many strong points within the program for their child. Among them were the high appeal the program held for children. Parents liked the individual help given the child for specific reading weaknesses.

Suggestions for program improvement included:

- longer duration of Talking Typewriter period when class train at the installation
- encourage more parents to visit the program to see, at first hand, what is being done to raise reading standards.

Parents indicated that, at home, they had encouraged their child to read more at home and had bought other reading books to foster greater interest in reading.

Parents had taken their child to the library, and had seen that the child joined the library reading club. Some parents had taken subscriptions to children's magazines and additional newspapers. Discussion of news items and other reading materials was emphasized. Neighborhood Center reading tutor services were also used to help the child.

Changes in attitude, reading performance, interest, and ability to understand what was read were rated on a three point rating scale by parents.

RATINGS OF CHANGES OBSERVED
IN READING PATTERNS
N=35 Pupils

Reading Pattern	Much	Some	None	No Report
Attitude Toward School	48.6	48.6	0.0	2.8
Attitude Toward Reading	57.1	42.9	0.0	0.0
Interest in Reading	65.7	31.4	2.9	0.0
Ability to Understand What is Read	42.9	51.4	0.0	5.7

Parents reported satisfaction with results the program achieved with their child's reading and hoped that more children would have an opportunity to attend.

Summary and Recommendations

The Talking Typewriter program served 757 pupils, during the 1974-75 school year, at the installation site and in school follow-up classrooms. The evaluation study of project records for 162 pupils reflected gains of four months in vocabulary and seven months in comprehension for 116 pupils in the fourth grade sample. However, less growth was observed for the sample of 46 pupils, in fifth grade classes, who had completed the full 180 day design. Gains for this group were two months in vocabulary and no gain in comprehension beyond gains of four month in vocabulary and three months in comprehension accomplished at the end of the six week Phase I period.

At fourth grade level 64.4 per cent of project participants attained the objective criterion of one month's gain for one month of instruction. Thirty-five per cent of fifth grade pupils from follow-up classes met the criterion. It has been observed, that the pattern of regression has occurred in the follow-up program. In recent years, it has also been noted that pupils' test performance has approached the test ceiling. The change from primary level testing to elementary testing was recommended in the 1973-74 study based upon 1971-74 evaluation studies. The project will pilot the elementary form of the Metropolitan Reading Test in the first half of the 1975-76 school year, and fully implement elementary level testing in the latter part of that year.

All teachers observed changes in pupils reading performances from "some" to "very marked" change.

Teachers were asked to provide in-depth assessment of the reading performances of a randomly selected number of 22 pupils. Results showed that teachers ranked these students from the middle one-fifth to the top

one-fifth of their peers in recognizing consonant and vowel sounds, identifying sight words for grade level, prouncing words, reading orally with undue frustration, finding main ideas, following sequence, getting meaning of words from context, recognizing directly stated details, drawing conclusion, participating in the reading group and completing written assignments.

Principals viewed the program's strengths as individualized instruction, aides in the classroom, children's reading successes, development of good study habits, and an incentive to teachers -- a new approach.

Principals recommended help for teachers in relating this program to the basal reading program.

Parents were generally enthused about the program's results with their child. They saw evidence of the program's high appeal and liked the individual attention provided the child's reading problem. Parents noted from "some" to"much"improvement in their child's attitude toward reading, interest in reading and ability to understand what is read.

Recommendations, based upon the evaluation study, input from parents, teachers and principals suggest:

1. Continuation of the Talking Typewriter program.

2. Change of test level from the prinary (out-of-level) to elementary test level.

3. Strict adherence to the selection of pupils for Talking Typewriter classes by all school principals.

4. Provision of additional opportunities for parent visitation to the project. Many parents are employed and cannot attend on program scheduled parent visitation days.

5. Orientation meetings for teachers from schools scheduled to participate in the Talking Typewriter program during the year, to be held in early September.

APPENDICES

APPENDIX I

TALKING TYPEWRITER
PUPIL ENROLLMENT*
PHASE I
1974-1975

	School	Date of Enrollment	Entry Enrollment
1.	William H. McGuffey	September, 1974	24
2.	Longwood	September, 1974	22
3.	Tremont	October, 1974	27
4.	John D. Rockefeller	October, 1974	29
5.	Mary Bethune	December, 1974	29
6.	Dike	December, 1974	28
7.	Woodland-Observation	January, 1975	24
8.	Marion-Sterling	January, 1975	34
9.	Washington Irving	March, 1975	29
10.	Sowinski	March, 1975	25
11.	St. Aloysius	April, 1975	25
12.	Hicks	April, 1975	38

APPENDIX II

TALKING TYPEWRITER
PUPIL ENROLLMENT*
PHASE II
1974-1975

	School	Termination Due	Full (180 day) Enrollment
1.	Tremont	October, 1974	15 October, 1973
2.	John D. Rockefeller	October, 1974	26 October, 1973
3.	John Raper	December, 1974	18 December, 1973
4.	Dike	December, 1974	18 December, 1973
5.	Mary Bethune	January, 1975	20 January, 1974
6.	Marion-Sterling	January, 1975	20 January, 1974
7.	Washington Irving	March, 1975	27 March, 1974
8.	George W. Carver	March, 1975	16 March, 1974
9.	Mary B. Martin	April, 1975	21 April, 1974
10.	St. Aloysius	April, 1975	25 April, 1974
11.	Hodge	June, 1975	11 June , 1974
		(Class Terminated at end of 6 week period)	
12.	Louis Pasteur	June, 1975	24 June, 1974
13.	William H. McGuffey	June, 1975	16 June, 1974
14.	Longwood	June, 1975	23 June, 1974
			280

CLEVELAND BOARD OF EDUCATION

Division of Research & Development

Date May, 1975

Talking Typewriter Classroom Teacher Opinionnaire

1. How many times have you participated in the Talking Typewriter Program as a teacher?

   1. 1 2. ____ 3. 3 4. ____

2. Briefly list ways in which you feel this approach met the reading needs of pupils in your class.

   a. especially helpful to those who have average and below average scholastic aptitude and have fallen behind in reading

   b. helpful to those pupils who progress was not hindered by poor attitudes or exhibited discipline problems

   c. fruitful in building self-confidence in each child

   d. source of reading reinforcement which increased pupils' reading growth

   e. an approach in which children could see their work checked "on the spot".

PLEASE RETURN THE COMPLETED OPINIONNAIRE TO JUANITA LOGAN, ROOM 603, NOT LATER THAN JUNE 6,1975. THANK YOU.

3. Should you wish to make suggestions based upon your experiences in the use of this approach to teaching reading, please use this space.

   a. require strict adherence to pupil eligibility requirements

   b. extension of time for classes at the Talking Typewriter center.

4. To what degree do you feel that your Talking Typewriter experience contributed to a change in the way in which you individualized reading instruction for pupils in your class?

N=4 teachers

Very Marked Change	Marked Change	Some Change	Little Change	No Change
50.0	25.0	25.0	0.0	0.0

4a. To what extent did the Talking Typewriter experience contribute to changes in pupils' reading performances for the majority of your class?

N=165 pupils

Very Marked Change	Marked Change	Some Change	Little Change	No Change
50.0	25.0	25.0	0.0	0.0

From your knowledge of this pupil's work in your classroom, how would you rank this child's reading performance as described below in relation to the other children in your class. (Visualize your class as being divided into fifths.)

Number of pupils in sample [22]

(Please Check)	Rank in Class: Top 1/5	Second Highest 1/5	Middle 1/5	Second Lowest 1/5	Lowest 1/5	No Report
a. recognizing consonant sounds	31.8%	27.3%	31.8%	0.0%	4.5%	4.5%
b. recognizing vowel sounds	27.3%	18.2%	40.9%	9.1%	4.5%	0.0%
c. identifying sight words for grade level	40.9%	27.3%	27.3%	4.5%	0.0%	9.1%
d. pronouncing words at grade level	31.8%	13.6%	36.4%	4.5%	13.6%	0.0%
e. reading orally without undue frustration	31.8%	9.1%	45.5%	4.5%	9.1%	0.0%
f. finding main ideas	18.2%	22.7%	27.3%	18.2%	13.6%	0.0%
g. following sequence	22.7%	13.6%	18.2%	18.2%	9.1%	18.2%
h. getting meaning of words from context	18.2%	40.9%	27.3%	4.5%	9.1%	4.5%
i. recognizing directly stated details	18.2%	31.8%	27.3%	18.2%	0.0%	4.5%
j. drawing conclusions from facts or statements	18.2%	13.6%	36.4%	18.2%	13.6%	0.0%
k. participating in reading group	18.2%	18.2%	31.8%	13.6%	4.5%	13.6%
l. completing written assignments	22.7%	22.7%	40.9%	9.1%	4.5%	0.0%

14. In what aspect of reading do you feel that the child has improved as a result of receiving the services of the Talking Typewriter.

1. Meaning of words from context.
2. Drawing conclusions.
3. Main ideas.
4. Sequence.
5. Improvement in all reading skills.
6. Improved word attack.

15. We would appreciate having any comments or recommendations about this program. (Use back of sheet).

School Various Date 1974-75 Evaluation

CLEVELAND PUBLIC SCHOOLS
TALKING TYPEWRITER PROGRAM

OPINION SURVEY
PRINCIPALS

This survey is intended to sample opinions of principals in whose buildings the Talking Typewriter Program is in operation.

Please check the box which tells whether your class:

[6] has recently completed the six week design

[8] has completed the 150 day follow-up program

How many times have classes from your school participated in the Talking Typewriter program? 3 schools - 1 time; 3 schools - 2 times; 2 schools - 3 times; 1 school - 4 time (s)

1. What do you consider the strengths of the Talking Typewriter program?

   Individualized attention and instruction
   Diagnostic testing - prescriptive teaching

2. Which of these strengths did you consider of most benefit to students in your school?

   Some children were making correct choices for the first time. They were encouraged to participate rather than being passive observers.

3. What elements might be improved?
   A guideline to help teacher translate grade level for a child who transfers to another school.

   Pre-parent and teacher conferences with pupils and project staff prior to entry into project.

4. Please list any reactions from the classroom teacher or students that you feel would strengthen this program.

   Smaller classes

   Continued use of teacher assistants

5. Did you observe more productive instruction to foster attention to individual pupil reading needs by the Talking Typewriter teacher?

   100.0% ☐ YES 0.0% ☐ NO

6. What recommendations would you suggest for improvement of the program?

   Prepare guidelines to help teachers dovetail regular school program with Talking Typewriter program.

   Consultant teachers should be assigned to the program who would come into the school to help the teacher.

PLEASE RETURN BY JUNE 6, 1975. THANK YOU.

Division of Research and Development
4/75

TALKING TYPEWRITER PROGRAM

School Various Pupil's Name Various

Parent Opinionnaire

Dear Parent:

We are collecting information to assist us in improving the Talking Typewriter Program. Your answers to the following questions will be helpful.

1. **How did you know that your child was participating in the Talking Typewriter Program?**

   Letter from school - 45.8% Child said - 50.0% Teacher called - 4.2%

2. **Did you have an opportunity to observe your child at the Talking Typewriter?**

   54.2% Yes 45.8% No

   How did you feel about what you saw?

   Felt that it was an opportunity for child to learn to read better using an improved method of teaching reading.

   Pleased with child's progress and interest in reading.

3. From your point of view, what do you consider the strong points of this program?

Interest child maintained in the program.

Learning to read became "fun", not a "bore".

4. What suggestions do you have for improving this project?
Lengthen time children work at the Talking Typewriter.
Encourage more parents to learn more about the program.

5. How did you help your child in reading at home?

Joined library reading clubs with child. Discussed news and magazine articles. Subscribed to children's magazines.

6. Please check changes you noticed in your child while he was enrolled in the program.

- attitude toward school

much	some	none	No report
48.6%	48.6%	0.0%	2.8%

- attitude toward reading

much	some	none	No report
57.1%	42.9%	0.0%	0.0%

- interest in reading

much	some	none	No report
65.7%	31.4%	2.9%	0.0%

- ability to understand what he is reading

much	some	none	No report
42.9%	51.4%	0.0%	5.7%

Please return this questionnaire to: Your child's classroom teacher. Please seal your envelope before returning the questionnaire.

Division of Research & Development